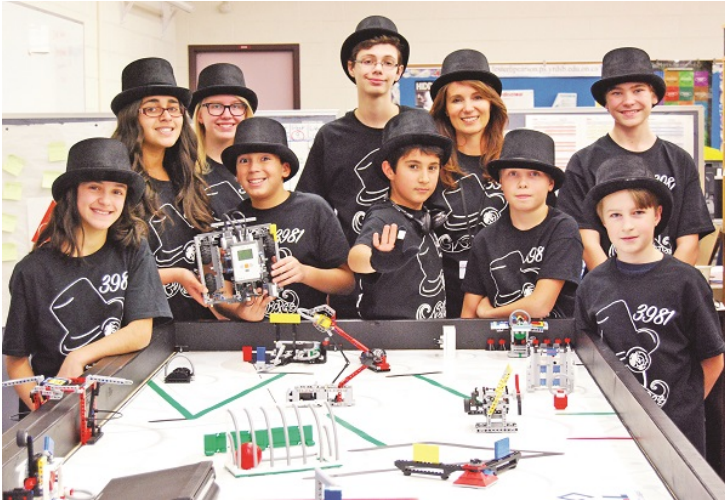


## Gadget to halt 'literacy crisis' wins students innovation award



**By Brock Weir**

York Region students descended on a Thornhill school on Saturday, laden with gadgets and gizmos to help improve the way we learn at any age.

The Robotics Club at Aurora's Lester B. Pearson Public School (LBP) was among the group showing off their apps, programs, and innovations at the Regional Championships or the First Lego League. And, with their own ingenuity, LBP's 'Classy Cyborgs' emerged victorious, securing the 'Best Innovative Solution' trophy for their answer to what has been described as a 'literacy crisis.'

The students' winning innovation is the 'Treasure Box Braille Program', a new and exciting way to teach visually impaired people of all ages the language system of raised dots.

'Our first idea was how we could teach the blind populace how to play music because we figured that would be a difficult thing for them if they couldn't read the sheet,' says Grade 8 student Isabel Neufeld. 'But, we then discovered through the National Federation for the Blind that only 10 per cent of blind children actually know how to read Braille and they said this was a crisis of literacy. We decided to fix that.'

Their solution was a specialized glove, which works in conjunction with an app, to teach students the Braille alphabet. The glove sends pulses to the finger tips which act similar to the venerable Braille system, and through a series of exercises the glove-wearer is rewarded for getting questions correctly.

The system uses Haptic technology, which translates information into something tangible and tactile, and has been applied in video games, mobile technology, and even virtual reality platforms.

At the inception of the program, the team didn't realise how dire the situation was for visually impaired individuals, says parent supervisor Lisa Andrade. Organizations like the Canadian National Institute for the Blind (CNIB) attribute this 'crisis in literacy' to a lack of resources, particularly teachers who can teach Braille. In York Region alone, there is just one resource teacher for blind students across all nine municipalities. This teacher came in to speak to the students about these challenges before they embarked on their journey.

'Students got a Braille alphabet and they were trying to learn it on their own, discovering it was very frustrating and difficult,' says Ms. Andrade. 'Additionally, they were researching what tools already existed and they were all very basic ' flash cards, wooden

blocks and [a typewriter]. There is nothing in the way of technology that helps a blind child learn Braille, much like how sighted students enjoy Leapfrog, Disney computer games, and the basics in learning that are all video-based.?

In developing their product, the Classy Cyborgs took the existing haptic technology and developed the software program to use with it.

Their work was informed by a school trip to the CNIB's National Braille Conference in October, where they explained their ideas and picked up some pointers along the way. There, some of the workshop leaders turned them onto a major Calgary-based company that is developing software to use with haptic devices and after Skyping with the CEO of the company a few weeks ago, he invited the students to present their ideas with him at an accessibility conference in Toronto next month.

?We have had some very positive feedback,? says Isabel. ?We talked to a blind girl and her mother and we told them about our idea, and she said she wanted to be the first one to try it out. She is with us in this. The CEO of the company that makes a tablet and glove that guides you across the screen was with us. One of the teachers for the blind in York Region was with us, and we talked to the CNIB and the National Federation for the Blind and they were with us. It is a pretty simple idea, and I guess that is all that really matters.?